AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for setting a firing temperature of cerium carbonate which is to be fired to produce a cerium oxide abrasive having a specific surface S, wherein the cerium carbonate has a fluorine content falling within a range of 10 to 500 ppm by mass, said method comprising the steps of:

(a) previously obtaining the following formula:

$$T = (700 + A) - B[\log (F)]$$

where T denotes the firing temperature (°C) of cerium carbonate to be fired, F denotes the fluorine content (ppm by mass) of cerium carbonate to be fired, and A and B are constants inherent to a firing furnace and a temperature elevation condition used in said firing, said constants A and B being obtained from the following formulae:

$$T1 = (700 + A) - B[\log (F1)]$$

$$T2 = (700 + A) - B[\log (F2)]$$

where T1 and F1, and T2 and F2, are two sets of firing temperatures (°C) and fluorine contents (ppm by mass), respectively, of two cerium carbonates different in fluorine content F1 and F2, in which said firing temperatures T1 and T2 are any two firing temperatures that allow to obtain cerium oxide having a specific surface area S in a range of 9.5 to 12.2 m^2/g in a predetermined firing furnace under predetermined conditions~~a relationship between fluorine~~

~~content f of cerium carbonate and firing temperature t for the cerium carbonate having fluorine content f which firing temperature t provides a cerium oxide abrasive having specific surface area S, for a firing furnace and firing conditions, and~~

(b) calculating the firing temperature T of cerium carbonate to be fired, said cerium carbonate having known fluorine content F, by inserting fluorine content F of said cerium carbonate to be fired into said formula of $T = (700 + A) - B [\log (F)]$ in which

constants A and B have been determined in the step (a); and

(c) setting the firing temperature T of said cerium carbonate to be fired ~~for~~ in said predetermined firing furnace and said firing conditions, wherein said firing temperature T is 690 to 780°C~~to firing temperature t_1, said cerium carbonate to be fired having fluorine content f_1, said firing temperature t_1 being derived from said previously obtained relationship wherein the fluorine content f is fluorine content f_1~~.

2. (canceled).

3. (withdrawn): A method for producing a cerium oxide abrasive comprising firing a raw material of cerium carbonate, in which the temperature of said firing is set in accordance with the method as set forth in claim 1 or 2.

4. (withdrawn): A method for producing a cerium oxide abrasive, characterized in that the method comprises firing a raw material of cerium carbonate having a fluorine content F (ppm by mass) falling within a range of 10 to 500 ppm by mass, at a firing temperature T (°C) selected within a temperature range defined by the following formula:

$730 - 14[\log(F)] \leq T \leq 790 - 10[\log(F)]$.

5. (withdrawn): The method for producing a cerium oxide abrasive according to claim 3 , wherein the cerium carbonate has a fluorine content falling within a range of 50 to 300 ppm by mass.

6. (withdrawn): The method for producing a cerium oxide abrasive according to claim 3, further comprising removing soluble fluorine from the cerium oxide abrasive.

7. (withdrawn): Cerium oxide abrasive lots produced through the method as set forth in claim 3, wherein the cerium oxide abrasive lots contain soluble fluorine in an amount falling within a range of 20 to 1000 ppm by mass based on the mass of the cerium oxide.

8. (withdrawn): The cerium oxide abrasive lots according to claim 7, wherein the cerium oxide abrasive lots comprise cerium oxide abrasives having a specific surface area falling within a range of 9.5 to 12.2 m^2/g.

9. (withdrawn): A cerium oxide abrasive slurry comprising cerium oxide, water and a dispersant capable of dispersing cerium oxide, wherein said cerium oxide is obtained from the cerium oxide abrasive lots as set forth in claim 7 .

10. (withdrawn): A method for producing a cerium oxide abrasive slurry, comprising the method for producing a cerium oxide abrasive as set forth in claim 3.

11. (withdrawn): The method for producing a cerium oxide abrasive according to claim 4, wherein the cerium carbonate has a fluorine content falling within a range of 50 to 300 ppm by mass.

12. (withdrawn): The method for producing a cerium oxide abrasive according to claim 4, further comprising removing soluble fluorine from the cerium oxide abrasive.

13. (withdrawn): Cerium oxide abrasive rods produced through the method as set forth in 4, wherein the cerium oxide abrasive rods contain soluble fluorine in an amount falling within a range of 20 to 1000 ppm by mass based on the mass of the cerium oxide.

14. (canceled).